Amendments to the Claims

Please amend Claims 1, 5, 8, 9, 11, 16, 17, 24, 25, 27, 29-31 and 33. Please cancel Claims 2-4, 6 and 28. The Claim Listing below will replace all prior versions of the claims in the application:

Claim Listing

1. (Currently amended) A protein lattice having a regular structure with a repeating unit repeating in three dimensions,

the repeating unit comprising protein protomers which each comprise at least two monomers fused together, the monomers each being monomers of ~~a respective~~ an oligomer assembly into which the monomers are assembled for assembly of the protomers into the lattice,

wherein the repeating unit comprises protomers comprising:

at least a first monomer which is a monomer of a first oligomer assembly which ~~is symmetrical in three dimensions~~ has a set of rotational symmetry axes extending in three dimensions; and

at least a further monomer fused to said first monomer which further monomer is a monomer of a further oligomer assembly, each further oligomer assembly having a rotational symmetry axis of the same order as one of the set of rotational symmetry axes of the first oligomer assembly and being aligned with the one of the set of rotational symmetry axes of the first oligomer assembly.

2-4. (Canceled)

5. (Currently amended) A protein lattice according to ~~any one of claims 2 to 4~~ claim 1, wherein the orders of the rotational symmetry axes of said set of rotational symmetry axes are ~~a respective one~~ independently selected from the group consisting of 2, 3, 4 [[or]] and 6.

6. (Canceled)

7. (Original) A protein lattice according to claim 6, wherein, in said protomers, said monomers are fused via a linking group.

8. (Currently amended) A protein lattice according to claim 7, wherein the linking group is oriented relative to the first and further monomers in the protomer in its normal form prior to assembly to reduce any difference in the assembled lattice in either or both of the position and orientation of (a) the termini of said first monomers in their arrangement in said first oligomer assembly in its natural form symmetrically around ~~said respective~~ one of said set of rotational symmetry axes of said first oligomer assembly, and (b) the termini of said further monomers in their arrangement in said further oligomer assembly in its natural form symmetrically around said rotational symmetry axis of said ~~respective~~ further oligomer assembly.

9. (Currently amended) A protein lattice according to claim [[8]] 1, wherein the protomers are homologous with respect to the monomers.

10. (Original) A protein lattice according to claim 9, wherein said first oligomer assembly belongs to either a tetrahedral point group or an octahedral point group.

11. (Currently amended) A protein lattice according to claim 10, wherein said further oligomer assembly belongs to a dihedral point group of the same order as the ~~respective~~ one of said set of rotational symmetry axes of said first oligomer assembly.

12. (Original) A protein lattice according to claim 10, wherein said further oligomer assembly belongs to either a tetrahedral point group or an octahedral point group.

13. (Original) A protein lattice according to claim 9, wherein said first oligomer assembly belongs to a dihedral point group of order 3, 4, or 6, and said protomers comprise at least two further monomers with a further monomer fused to each terminus of said first monomer of said first oligomer assembly.

14. (Original) A protein lattice according to claim 13, wherein one of said further monomers is a monomer of an oligomer assembly which belongs to a dihedral point group of the same order as the dihedral point group to which the first oligomer assembly belongs.

15. (Original) A protein lattice according to claim 14, wherein the other of said further monomers is a monomer of an oligomer assembly which belongs to a dihedral point group of order 2.

16. (Currently amended) A protein lattice according to ~~any one of claims 3 to 8~~ claim 1, wherein the protomers are heterologous with respect to the monomers.

17. (Currently amended) A protein lattice according to claim 16, wherein the ~~unit cell~~ repeating unit includes protein protomers of two types, and wherein the two types of protomers include different monomers of the same heterologous oligomer assembly.

18. (Original) A protein lattice according to claim 17, wherein at least a first type of protomer constitutes said protomers with the first monomers of the protomers being assembled into said first oligomer assembly and said further monomers of the protomers fused to respective first monomers are one of said different monomers of the same heterologous oligomer assembly, said heterologous oligomer assembly belonging to a cyclic point group.

19. (Original) A protein lattice according to claim 18, wherein said first oligomer assembly of the first type of protomer belongs to either a tetrahedral point group or an octahedral point group.

20. (Original) A protein lattice according to claim 19, wherein the second type of protomer comprises a monomer which is a monomer of an oligomer assembly belonging to a dihedral point group of the same order as said heterologous oligomer assembly.

21. (Original) A protein lattice according to claim 18, wherein the second type of protomer comprises a monomer which is a monomer of an oligomer assembly belonging to either a tetrahedral point group or an octahedral point group.

22. (Previously presented) A protein lattice according to claim 1 having an array of macromolecular entities attached thereto.

23. (Original) A protein lattice according to claim 22, wherein the protomers have, at a predetermined position in the protomers, an affinity tag attached to a macromolecular entity.

24. (Currently amended) A protein lattice according to claim [[23]] 22, wherein the macromolecular entities have a peptide affinity tag attached to one of the protomers in the protein lattice.

25. (Currently amended) Use of a protein lattice according to claim 1 as a support for [[the]] an array of macromolecular entities for x-ray crystallography of the macromolecular entities.

26. (Previously presented) A method of performing x-ray crystallography comprising supporting an array of macromolecular entities on a protein lattice according to claim 1 and performing x-ray crystallography on the lattice having the macromolecular entities supported thereon.

27. (Currently amended) A protein protomer comprising at least two monomers fused together, the monomers each being monomers of a respective oligomer assembly into which the monomers are capable of self-assembly to assemble at least part of a repeating unit of a protein lattice having a regular structure repeating in three dimensions, wherein, in said protomer, at least a first monomer is a monomer of a first oligomer assembly which ~~is symmetrical in three dimensions~~ has a set of rotational symmetry axes extending

in three dimensions, and at least a further monomer fused to said first monomer is a monomer of a further oligomer assembly, each further oligomer assembly having a rotational symmetry axis of the same order as one of the set of rotational symmetry axes of the first oligomer assembly and being aligned with the one of the set of rotational symmetry axes of the first oligomer assembly.

28. (Canceled)

29. (Currently amended) Plural different protein protomers according to claim [[28]] 27, wherein the monomers of the plural different protomers are capable of self-assembly with each other to form the entire protein lattice.

30. (Currently amended) A polynucleotide encoding a protein protomer according to claim [[28]] 27.

31. (Currently amended) A vector capable of expressing a protomer according to claim [[28]] 27.

32. (Original) A host cell comprising a vector according to claim 31.

33. (Currently amended) A method of making a protein protomer according to claim [[28]] 27, comprising expressing a polynucleotide sequence which encodes the protomer in a host cell and, optionally, purifying the expressed protomer.

34. (Canceled)